What is claimed

[1] A solid electrolytic capacitor comprising:

an anode formed of niobium or niobium alloy;

a first dielectric layer containing niobium and oxygen whose major component is niobium or oxygen formed on the anode;

a second dielectric layer containing phosphorus or sulfur in addition to niobium and oxygen formed on the first dielectric layer;

and a cathode formed on the second dielectric layer.

[2] The solid electrolytic capacitor as claimed in Claim 1, wherein

fluorine is contained in the first dielectric layer.

[3] The solid electrolytic capacitor as claimed in Claim 2, wherein

fluorine concentration contained in the first dielectric layer is increased toward the anode side from the cathode side.

[4] The solid electrolytic capacitor as claimed in Claim 1, wherein

an electrolyte layer is provided between the second dielectric layer and the cathode.

[5] A fabrication method for solid electrolytic capacitor comprising the steps of:

forming a first dielectric layer whose major component is niobium or oxygen by anodizing an anode formed of niobium or niobium alloy in a first aqueous solution;

forming a second dielectric layer containing phosphorus or sulfur in addition to niobium and oxygen on the first dielectric layer by anodizing the anode formed with the first dielectric layer in a second aqueous solution containing phosphate ion or sulfate ion;

and forming a cathode on the second dielectric layer.

[6] The fabrication method for solid electrolytic capacitor as claimed in Claim 5, wherein

fluoride ion is contained in the first aqueous solution.

[7] A fabrication method for solid electrolytic capacitor comprising the steps of:

forming a first dielectric layer containing niobium and oxygen whose major component is niobium or oxygen by anodizing an anode formed of niobium or niobium alloy in a first aqueous solution;

forming a second dielectric layer containing phosphorus or sulfur in addition to niobium and oxygen on the first dielectric layer by anodizing the anode formed with the first dielectric layer in a second aqueous solution containing phosphate ion or sulfate ion;

forming an electrolyte layer on the second dielectric layer;

and forming a cathode on the electrolyte layer.

[8] The fabrication method for solid electrolytic capacitor as claimed in Claim 7, wherein

fluoride ion is contained in the first aqueous solution.